The Maryland Fruit Grower

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Edited by the Secretary, A. F. Vierheller, Extension Horticulturist

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THE FORTY-FIFTH ANNUAL MEETING

With an unusual attendance, the Forty-Fifth Annual Meeting of the Maryland State Horticultural Society convened in Hotel Alexander, Hagerstown, January 6th. There were no educational or commercial exhibits, due to conditions, but tables were supplied for use of commercial representatives where small, attractive displays were located.

A fine colored movie, "The Life of the Soil" was shown by courtesy of National Fertilizer Association, portraying the formation, change and structures of soils: bacterial action, and the role of organic matter and fertilizer in soil-building and maintenance.

Mr. Carroll R. Miller, President, National Peach Council, cited the 65½ million bushel peach crop of 1942 with 11 million trees just coming into bearing, as an indication that the present peach crop will continue in volume. Commercial canners can take about 20 million bushels leaving about 45 million bushels for the fresh market to consume in 10 weeks; an over-saturated market condition. About 18 million bushels are used as fresh fruit so there must be a drive on home canning to consume the surplus. In 1942 housewives canned in unusual amounts, and this must be increased through publicity and contacts with grocers. Government purchases of peaches weakens the growers. The Council is working to have peaches properly recognized in the national nutrition program. Their publicity was assisted by commercial cereal and flour concerns in a great way. The Council also had additional refrigerator cars completed for use; had the canning sugar ban eased; worked to prevent price ceilings, etc. Peach growers must cooperate nationally, as 8 million more tons of food are on the market than a few years ago, and competition is keen.

Dr. Firman E. Bear, New Jersey Agricultural Experiment Station, stated that nitrogen was the most elusive of plant foods. With 35,000 tons of nitrogen in the air over an acre, there are only 3,000 pounds in an acre of soil at plow depth (equivalent to about 10 tons of nitrate of soda or 7½ tons of sulfate of ammonia), and about half as much in the second plow depth. Commercial nitrogen-fixing has greatly increased, and after the war it may be cheap. He advised using, not accumulating nitrogen. Lime and cultivation were suggested, getting the lime deep into the soil by plowing under, and using legumes suited to the soil and crop conditions, citing the use of alfalfa in one experiment where after 7 hay crops the soil showed 65 lbs. of fixed soil nitrogen per ton of hay harvested. He suggested growing and hauling in legume hay, and resting of land for one year by proper rotations. He stated that orchards could be rested by pulling out certain blocks, growing or hauling in cover crop hay, then replanting the block after soil is improved. Deep placement of fertilizer was recommended for young trees as well as for cover crops, plowing it in for best results. He stated that all salts in the ocean were washed from the soil, and if they

were dried and piled on dry land, they would cover the U. S., Canada, and Alaska to a depth of 3½ miles. Manure worked into the soil is excellent, but very strawy manure is slow-acting at first. Any residues containing less than ½% nitrogen, placed on the soil are poor, as soil bacteria use up the nitrogen. Organic nitrogen fertilizers are good, and rather plentiful, but they should not contain less than 5% nitrogen to be of any real value.

President Stanley M. Fulton reviewed the serious labor situation, and expected to see deferment and appeals in many cases. Growers should consider a wage increase, and should order necessary equipment and supplies so manufacturers can spread their work; also ceiling prices may rise. He advised putting more money into the soil through fertilizer and lime, charging this to operating expense.

Dr. C. H. Mahoney, Head, University of Maryland, Department of Horticulture, stated that the military had a high quality standard on dehydrated foods, and poor stock should not be dried. He predicted a return to cans after the war, but a lot of dried foods, soups, etc., will remain. Freezing promises greater use of some fruits, and home freezing cabinets are being used for home storage of fruits, meats, etc. Probably many more freezing plants will be built during war period. Of the 400 million pounds of the present commercially frozen foods, 47% are vegetables, but fruits will increase greatly after the war.

Dr. A. L. Schrader, Professor of Pomology, University of Maryland, explained the apple dehydrating research done at the University, using York, Stayman, Grimes, Ben Davis, and Jonathan. Found considerable difference in final tonnage between varieties. Final flavor, food value and appearance were the main considerations studied. Newer drying methods are giving a fine product. Apples are being dried in sections rather than rings. After cutting, the sections are placed in thiocarbimide then sulfured by sulfur dioxide gas, then run into the dryer in almost raw state. Forty-five pounds of apples makes 33 pounds of cored and peeled stock, yielding 5 pounds of dried stock. Dr. Schrader is working on vitamin content and storage changes occurring in the dehydrated apples. He passed samples of dehydrated apples to the audience and much satisfaction was expressed on the appearance, texture, and taste of the fruit in the raw, dried state, also the cooked product with no sugar added.

Mr. L. C. Carey, In Charge Container Standardization, Fruit and Vegetable Branch, Agricultural Marketing Administration, U.S.D.A., stated that the war demand for lumber is the main cause for the critical wooden package situation. Sweeping standardization changes will be made in fruit and vegetable containers, but the older standard containers will remain, though probably reduced to minimum number of dimensions. (Editor's Note—There are now 2 different dimensions, 1⅛ bu. Eastern apple boxes, each made up in 3 end-styles; solid, panel or cleated.) The use of cloth and paper containers will increase, and salvage of used wooden containers will be emphasized. Order baskets and boxes immediately for immediate delivery. Substitute containers are being considered. So far, no satisfactory substitute has been found for wooden containers for apples citrus fruits, tomatoes, etc. In reply to a statement that apples are classed as delicate fruit, requiring wooden containers and deserving a high priority rating, the speaker stated that apples are in the 4th category of priority rating and though apples are tender, the W.P.B. is tough. He estimated that 75%

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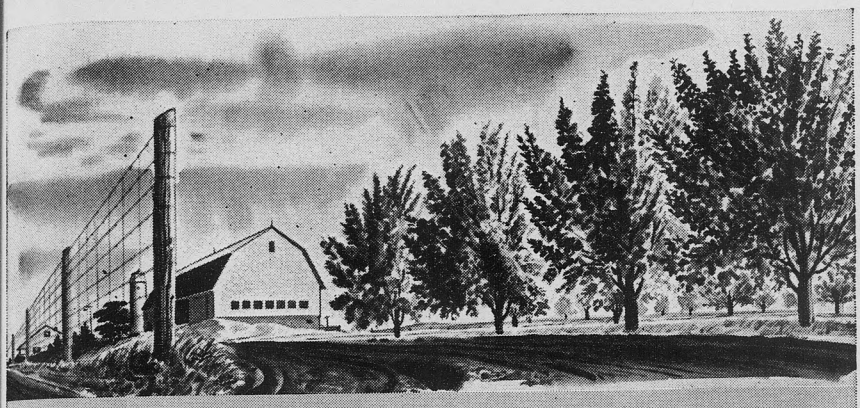

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of the 1942 package supply for fruits might be a possibility, though labo conditions, supplies, and many other factors made any prediction uncertain

Dr. R. B. Corbett, Director, Maryland Agricultural Experiment Sta tion, traced the rise and fall of prices, showing depression years, and thei serious effects upon agriculture, emigration, back-to-form movements, etc Price curves have shown high war prices, then a crash and a long depression This time, the Government has set prices, but ignored wages, then late tried to limit wages. The speaker stated that the war must be won, and i price-controls interfere, they will be over-run. With more income, peopl will pay more to get what they want. Wages should be figured in cost o products, and freezing of prices in poor proportion causes farmers to shif to high-priced crops. Subsidies in certain farm crops are not good as farmers lose control of such crops. Hopeful signs are that farmers are not expand ing operations unduly, and are buying war bonds and have increased savings accounts. The post-war export market is a question. Possibly less foreign competition, but more trade barriers may be set up for national preservation. He advised payment of debts, non-expansion, and more savings in war bonds as a prevention of inflation, stating that post-war adjustments should come from the individual up, not from the Government down, warning that the community and the state should be preparing for such re-adjustments.

Dr. L. P. Batjer, Senior Horticulturist, Beltsville Horticultural Station, U.S.D.A.., reviewed his work with caustic sprays in blossom removal either as a means of blossom-thinning to reduce fruit-set and necessity of heavy hand-thinning, or as a means of affecting biennial bearing, or even as a complete blossom removal where light set of fruit would give an unprofitable crop, or as a partial control of codling moth. In general, the higher tree vigor, the less effective the spray seemed to be, and the higher the tempera ture (during or following application), the more effectively the spray seemed to work. However, the research has not been sufficiently extensive to advise regarding all varieties, or weather conditions. For blossom-thinning, 1½ pints of Elgetol per 100 gallons of water, has given food results on Trans parent, Wealthy, and York apple, when applied at time trees were about 80% in full bloom. On low vigor trees, reduce the Elgetol to 1 pint per 100 gallons of water. Some of the self-unfruitful varieties (Stayman, Delicious, Winesap, etc.) may set too lightly after such a spray and more work is necessary, before advice on these varieties can be given. Where complete blossom removal is desired, the use of ⅓ pound of dinitro powder in 100 gallons of 1% oil, spraying when blossoms separate in the cluster, and again when 50% of the blossoms are open, and repeating, if necessary, at full bloom, has given good results. Even then, spraying must be thorough, and there is possibility of some necessary hand-thinning of some fruits that may set. The work with peaches has been limited, and is still experimental, but promises to be practical for use by growers.

Dr. E. N. Cory, State Entomologist, outlined changes in the 1943 Mary land Spray Calendar suggesting that in order to conserve on copper, a lime-sulfur spray be used in peach leaf-curl control, adding oil if necessary, for scale control; also reducing copper sulfate in Fourth Cover Apple Spray, unless bitter-rot was serious; and using DN dormant spray in preference to delayed dormant spray to save labor and get better results. On the basis of 1942, supplies of materials was about as follows: arsenicals, 75-85%; coppers, 75%; cryolite, 25% more; fish oil and hormone sprays, about same;

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nicotine, adequate. Pyrethrum and rotenone are "out" for fruit and some vegetable crops, but will be made up for special uses.

Dr. A. L. Schrader, Pomologist, University of Maryland, suggested some short-cuts in pruning in saving labor, and conserving nitrogen fertilizer. He considered: less detail pruning; use of fewer and larger cuts less small thinning cuts on peach trees; cutting back to lateral branches limiting pruning to lower parts of trees where shading and thickness may cause poor size, color, and insect control; little or no pruning of young trees little or no pruning of certain apple varieties that bear near the branch ends (such varieties as Rome, Jonathan, Gano, Winesap, and N. W. Greening). In general, less thinning cuts and more heading back to laterals was suggested for peach trees, and more thinning and less heading back to laterals was suggested for apple trees.

Dr. W. S. Hough, Entomologist, Winchester (Virginia) Research Laboratory, found no assurance that we would have another rosy aphis outbreak in 1943. The insects go from the apple to plaintain, for summer, then fly back to the apple in the fall, where eggs are laid in bark cracks and on all parts of lower limbs out to branch ends in lower parts of trees. Tracing 21 years' history, he reported 9 serious aphis outbreaks, only 2 in succeeding years. Usually, bad outbreaks occur when eggs are scarce on trees, and this winter they seem to be plentiful. However, take no chances. He found dormant sprays consistently better than delayed dormant. DN sprays with or without oil were good in dormant with thorough coverage. Four percent oil combined with DN had caused bud injury and he advised that where scurfy scale and red mite were serious, the DN spray be applied as a dormant spray, and 4% oil in early delayed-dormant spray. Reasons for failure to control aphis last year were: early ending of dormant season, and a short delayed-dormant season, also rains that washed off the spray. He suggested that there are usually only 2 or 3 good days for delayed-dormant spraying.

Mr. M. E. Knouse, Canner and Fruit Grower, Peach Glen, Pa., stated that there were more important problems than marketing, as we consider labor, fertilizer, spray materials, packages and transportation problems. A hungry world must be fed, and as we leave an over-supply period and enter a shortage period, we must substitute and devise, but produce the maximum.

Order M-81, amended Dec. 9, gives canners 63% of 1942 pack of canned apples, and 41% of 1942 pack of apple-sauce, the Government taking it all, with none allowed for civilian use. Eastern freestone peaches unlimited and Government will take 63% of pack. There is small capacity for peach canning in the East, and little chance of expansion during war. Dehydration of apple and peaches is expanding. If a large fruit crop is produced, growers must fill storages, and plans must be made for drying or freezing of fruits but his opinion was that nothing would be allowed to go to waste.

An interesting colored movie was shown by courtesy of University of Delaware, in which the Speed Sprayer was shown in action.. This machine uses low-pressure on the spray liquid, which is blown into the trees by a high-speed blast of air, one man running both the sprayer and tractor. Also, there were several types of experimental sprayers shown, which used spray brooms or guns several of which were mounted on rigid uprights, and manipulated either by the tractor driver or another man, by use of pedals or levers. The Grabill Grader Co. showed a colored movie of the new grader

PRESENTED BEFORE MARYLAND STATE HORTICULTURAL SOCIETY, JAN. 7,1943.

WARTIME CHANGES IN PRUNING FRUIT TREES TO SAVE LABOR AND NITROGEN FERTILIZER

by

A.L.SCHRADER, POMOLOGIST, UNIVERSITY OF MARYLAND, COLLEGE PARK, MD.

Fruit growers are looking for shortcut methods in the handling of their orchards and particularly to utilize limited labor to the best advantage. An added problem is the prospect of less nitrogen for the orchard. At this time of the year the grower is, or soon will be,busy with pruning of his trees but he must change his usual practice or let many of his trees go unpruned. Unpruned trees will require more labor at fruit thinning time, more nitrogen to maintain growth, and moreover, thorough spray coverage may not be possible on unpruned trees which may result in more wormy and diseased fruit and more labor in sorting and packing. Now what can be done about this situation?

First, let us look at all of the possibilities of shortcuts in our pruning methods on bearing trees, listing them as follows:

1. Less Detail Pruning.
2. Use of larger cuts and fewer cuts per tree.
3. Less thinning cuts, and more cutting back to lateral branches.
4. Limiting pruning largely to lower part of tree.
5. Little or no pruning of certain varieties.
6. Little or no pruning of young trees.
7. Use of 4-leaf clover system.

Considering less detail pruning, it is possible to get along with fewer of the many small cuts that are usually made throughout the tree, particularly with the peach tree. Many of the small twigs on the peach tree may appear unsightly but nature takes care of these twigs on the inside of the tree by shading them out. With the peach, part of the detail pruning is in the form of thinning cuts, but if the majority of cuts are not thinning cuts but rather cutting back to good lateral branches on two or three year old wood, many less cuts will need to be made. In cutting back the branches of a peach tree, a common error is often made in that the pruner cuts back one year old wood to laterals on such wood, and such cuts result in a dense top-growth under which fruits are poorly colored.

If fewer detail cuts are made on the apple tree, more larger cuts can be made up to an inch-sized branch provided the pruner selects the weaker growing branch and makes a thinning cut rather than cutting back at the ends of the branches. On the apple, the branch of about an inch in diameter that arises from a larger branch 4 or more inches in diameter at the point of juncture, usually is a weak, poorly fruitful type of branch that can be removed entirely rather than making several small detail cuts at this point on the tree.

However, with the bearing apple tree, the use of cutting back to laterals leads to trouble, especially if such cuts are made in the top of the tree. Old weak trees can be greatly stimulated by such cuts, but younger bearing trees are over-stimulated into upright growths in the top of the apple tree that are difficult to handle several years after such pruning.

With apple trees that have been well pruned in previous seasons, it is quite possible to limit the pruning to the lower part of the tree or even to do no pruning on some varieties. The lower part of the tree usually has become more matted with growth and more in need of spacing of branches, whereas the upper part of the tree is more open and even if quite bushy, is in a more favorable position for light and penetration of spray. Some varieties, such as Rome Beauty, Jonathan, Winesap, Ben

Davis, Gano, and Northwestern Greening, have more of a terminal-bearing habit rather than spur bearing, and, therefore, such varieties have more fruits on the outer portion of the tree exposed to light and sprays; thus such varieties may be left with little or no pruning with good results.

Likewise apple trees that have borne a very heavy crop in 1942 and appear to have prospects of little or no crop in 1943, can be left unpruned without harmful effect, in fact, pruning may remove some fruiting wood that should be retained.

Another possibility for the reduction of the labor bill is the adoption of so-called Four-leaf Clover system of pruning as practiced in one orchard in northeastern Ohio, described by N. F. Childers in the January 1941 issue of American Fruit Grower Magazine. In this system, it is claimed that pruning is minimized by the cutting of two channels through the tree, dividing the tree into four quarters. These channels are developed gradually on the older tree with a minimum of pruning in the four quarters. Such pruning, aside from saving in pruning labor, is supposed to aid in the penetration of spray, to make it easier to thin and pick the fruit especially aiding the use of step-ladders in these operations, and to increase the quality of fruit by opening the tree for better penetration of light. This suggestion is offered now for what it may be worth under the present emergency.

Particularly with the young non-bearing tree can saving in pruning be accomplished even to the omission of pruning in 1943, although a few cuts to eliminate bad crotches would be preferable to no pruning with the apple and the peach, and a light tipping of the main leaders of the peach should be done by all means, even if no other pruning is done. Experiments and experience have taught us that the least pruning of a young tree that can be done without sacrificing the future strength and symmetry of the framework of the tree is the best method of handling the young tree to get early bearing, a larger tree and more spreading habits after fruiting begins. Over-pruning of the young tree is too often encountered in practice.

With the bearing tree, especially the peach, we must not forget that pruning also serves to reduce the fruit thinning job and decreases the amount of nitrogen that must be used to maintain growth. However, the pruning cut that cuts back to a lateral branch is much more effective to accomplish these results than the thinning cut that removes a branch or twig to its point of origin. The thinning cut has little stimulative effect on the remaining part of the tree.

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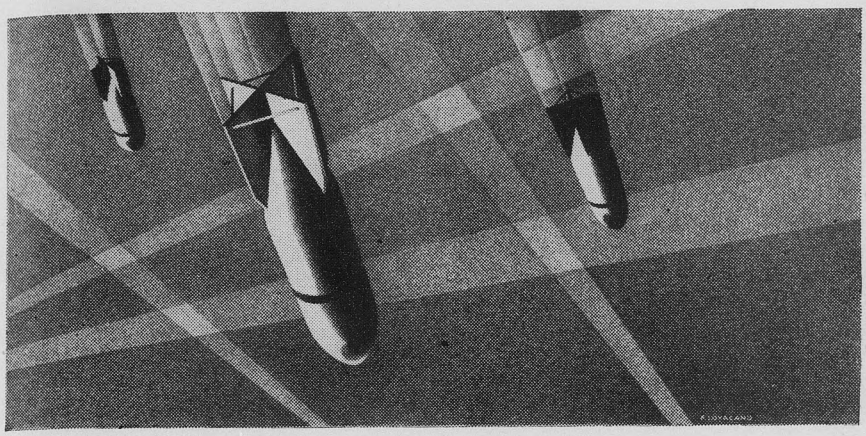
which takes out the larger-sized fruit first and reduces bruising of fruit during the grading process.

Dr. F. B. Bomberger, Coordinator of Marketing, University of Maryland, stated that the war may last a long time and we are faced with shortages and uncertainty in all things. This will cause tighter market controls, and we must expect dictator economy. With the military and lend-lease, the U. S. Department of Agriculture has become the world's largest grocery store. There is a question whether distribution of materials will be through large industries with overwhelming of small business. Competition may become a luxury. Railroads, steel mills, and auto plants no longer compete, but work together for common good. Possibly, reduced speed laws, and scrap collections may continue on a voluntary basis, but they may be somewhat controlled or made compulsory. Under present market conditions, the speaker suggested standardized packages; uniform and standard grades; keeping culls out of fresh fruit channels to conserve transportation; development of more by-products; better trade agreements between states. Wartime offers great chance for sales promotion through publicity, and Victory Food Specials are helping people to like certain foods. He suggested regional or State cooperative sales movements to stabilize markets. We must overcome obstacles as our troops are doing, no matter what the odds may seem to be, and must prepare to do the impossible.

Mr. C. B. Denman, Agricultural Counsel, National Association of Food Chains, Washington, D. C., stated that stores were having difficulty in keeping shelves stocked, when formerly, they were moving surpluses. He complimented growers in their job of self-help through advertising organizations, in recent years. He discussed the changes in all types of retail stores, stating that women clerks were proving excellent in the fruit and vegetable departments. Self-service stores are increasing, and this calls for better grading and quality of produce. Banana shortage has caused a buyers' trend to other fruits. Packages should be further improved, and he suggested a sanitary, light, transparent package that is tough, square, not affected by temperature, and designed for one trip to market. This would put more responsibility on the grower, but might result in selling larger quantities to the consumer. The post-war outlook is not bad, for if we win we will have our liberties, initiative, and our soil fertility unimpaired.

Dr. S. H. DeVault, Secretary, Maryland State Farm Labor Committee, stated that this mechanized war requires more workers to back up industry, and the armed forces. The Committee studied conditions to find how they could help the farm labor picture. County committees surveyed county farm labor conditions, and employment offices were set up to recruit and place laborers, under direction of a farm labor placement director. The State Committee contacted W.P.A., N.Y.A., C.C.C., and welfare agencies, and secured some farm labor, and State penal institutions sent men to the fields near the institutions. A cooperative agreement was made with Selective Service allowing local boards to review hair-line cases. As a result, 4457 men were deferred, and 424 were refused in a year, but later 10% of the refusals were deferred. A conference was held with War Man-Power Commission regarding loss of farm labor to industry, showing that industry took six men while selective service took 1 man. Now the law states that industry cannot hire farm workers. Truck crops, apples, tobacco, and vegetable harvests were hardest hit last year. In normal times Maryland had 56,000



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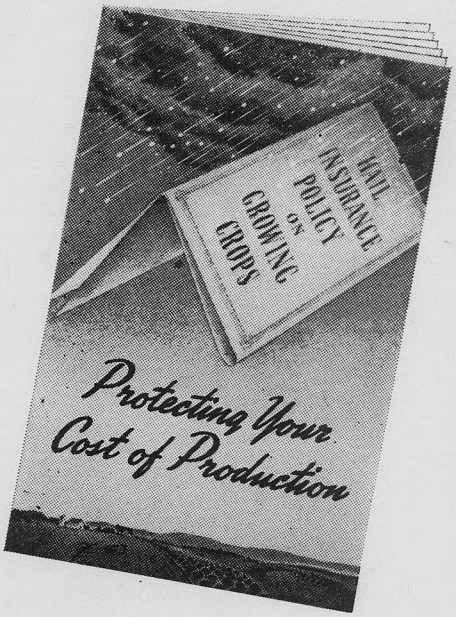

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steady farm workers (farm families) and an additional 30,000 hired workers on farms in peak harvest. The speaker outlined several helps in orchard labor: 1—release from military service of men over 38 years, if requested by trainee and a job assured by employer, but dependent upon whether trainee is of more value in the military service. 2—possible migratory labor camps if wanted, or if men can be housed properly. 3—use of in-school youth if schools were opened later. In such cases, training schools must be established. Last year, 85% of these youth made good on farms. 4—recruiting and training of woman labor. 5—use of prison labor. 6—use of conscientious objectors. 7—discontinue undeserved welfare payments. 8—trade labor between farms, and make labor short-cuts. The speaker discussed the farm unit system for deferment of selectees, and felt that some adjustments in farm units and man-power should be made for Maryland conditions.

Among several resolutions, the most important was one requesting consideration of all possibilities in making sufficient wooden packages or providing for use of used containers in the marketing of farm products, especially fruits.

The present officers were re-elected, and J. P. Caspar was elected to the Executive Committee, since R. S. Dillon, Jr., is in military service, but was retained as an honorary committee member.

The officers for 1943 are: President, S. M. Fulton; Vice-Presidents, D. T. Walker and Lloyd Balderston; Secrcetary-Treasurer, A. F. Vierheller; Executive Committee: R. S. Dillon, Jr., A. L. Schrader, O. R. Higgins, W. C. Main, D. E. Rinehart, E. C. McFadden, S. B. Waddell, R. C. Shaw, J. P. Caspar; Md. Farm Bureau Director, J. A. Cohill; Md. Farm Bureau Delegates, M. T. Heaps, E. D. McCain.

Have you read the advertisements?

FRUIT PACKAGES

A resolution regarding fruit packages adopted during the Annual Meeting was sent to the various Government agencies.

The following letters were received by A. F. Vierheller, Secretary:

This will acknowledge copy of a resolution adopted by the Maryland State Horticultural Society at a meeting in Hagerstown, Maryland, on January 7.

It is not believed that consideration will be given to a mandatory restriction order prohibiting the use of wooden containers for the more essential crops and those for which it has been determined there is no satisfactory substitute container available. It is believed, however, that serious consideration should be given to the development of substitute containers and their practicability in shipment and storage, inasmuch as heavy demands of the military and purchases under Lend-Lease will undoubtedly influence the amount of lumber that is available for boxes and baskets during the coming season.

You will be interested to know that in consideration of the possibility of utilizing substitute containers for fresh fruits and vegetables, the Department of Agriculture is supervising a series of test shipments which will cover distribution from shipping points to retailers. Several bureaus are interested in these tests, which will be conducted by a determination of strength durability and ventilating qualities under storage and actual ship-

ping conditions, in order to prove their effectiveness. Other programs have been proposed by the Department of Agriculture which include the standardization and simplification of new containers and the salvage and reuse of used containers. Special recommendations covering these programs have already been transmitted to other interested governmental agencies concerned with the conservation of strategic materials, including lumber, veneer and steel.

Please be assured that the Department of Agriculture will continue to cooperate closely with these agencies in an attempt to assure that fresh fruits and vegetables will be safely stored and transported during 1943.

Very truly yours,
R. A. PALEN, *Chief* Processing & Packaging Division
Office for Agricultural War Relations, U.S.D.A.

The Resolution of the Maryland State Horticultural Society pertaining to the conservation and standardization of fruit and vegetable containers, which you sent to Dr. W. G. Meal, has been referred to this office.

We certainly appreciate the fact that the Maryland State Horticultural Society recognizes the importance of an aggressive program for fruit and vegetable containers. The Department of Agriculture is working with other government agencies in developing a number of programs which we hope will provide enough packages so that food products will not be lost.

The points mentioned in the Resolution of the Society are certainly sound and all of them are receiving the attention of the Department. As you may know, there is a proposed standardization order of the War Production Board which is expected to be issued within a short time. This proposed order has as its objective the conserving of critical materials by standardizing the various packages, thus reducing the necessity for large inventories and increasing their value for re-use.

The matter of a conservation order for the salvage of second hand containers has been discussed a number of times. However, at the present time there is not such an order in the process of development. The Department, however, has prepared material which is to be used by the Agriculural Extension Service in an aggressive publicity program stressing the importance of salvaging fruit and vegetable containers for re-use and using our methods for accomplishing these objectives.

There has been developed in the Department a broad program for supervising test shipments of fruit in substitute packages. To date a number of such shipments of citrus fruits have been made and it is planned to expand the program to include a number of commodities. It is our thought that these supervised tests will indicate the actual merit of these various packages so that growers and shippers will use them to the best advantage.

Thanking you for bringing this Resolution to our attention, we are

Very truly yours,
D. W. HARRISON,
Market Programs Division, Fruit & Vegetable Branch
Food Distribution Administration, U.S.D.A.

Save Fats for Ammunition.

That one dollar for 1943 annual membership in Maryland State Horticultural Society is due. Send it to the Secretary.

D-X NICOTINE IS NICOTINE AT ITS BEST

D-X Nicotine Adds Power to Arsenate of Lead for Better Codling Moth Control

Authorities agree that there is no substitute for arsenate of lead for codling moth, but that it does need more power. D-X Nicotine supplies this needed power.

Fruit growers in the most heavily infested codling moth areas have demonstrated time and again that the addition of D-X to the rgular codling moth schdule reduces stings as well as entries to a lower minimum than was ever believed possible. Growers are getting maximum control by adding D-X Nicotine (diluted 1 to 600 or 800) to two sprays for the first brood and two for the second.

D-X Nicotine is positively the most lethal spray ever developed by the B. G. Pratt laboratories. It not only has the impressive property of building up the kill of codling moth, leaf roller, and hard-to-kill insects, but has amazing ability in the control of aphis (diluted 1 to 800) in the early sprays.

Write for your copy of "D-X Adds Power". Address Department "F".

B. G. Pratt Company

50 Church Street **New York, N. Y.**

Manufacturers of Scalecide, Para-Scalecide, Spray Catalizer, Spra-Cream, Straitar, D-X, etc.